

U.S. Patent Application Serial No. 09/492,373
Response dated August 8, 2003
Reply to OA of April 9, 2003

REMARKS

Claims 1, 2, 4, 6-10 and 14-18 are pending in this application. Reconsideration of the rejections in view of the amendments and the following remarks is respectfully requested.

Rejection under 35 USC §103(a)

Claims 1, 2, 4, 6-10, and 14-18 were rejected under 35 U.S.C. §103(a) as being obvious over Nguyen et al (U.S. Patent No. 6,248,805) in view of Patel et al (U.S. Patent No. 5,977,210) and Fujisawa et al (U.S. Patent No. 5,997,136).

In the previous amendment, independent claims 1, 14, 16 and 17 have been amended to recite “(a) 40 through 80 wt% of styrene; (b) 10 through 80 wt% of alkyl acrylate or alkyl methacrylate; and (c) 5 through 10 wt% of polymeric monomer including a polar group, the polymeric monomer including a polar group selected from the group consisting of acrylic acid, methacrylic acid, 2-hydroxypropyl-N, N, N-trimethylammonium chloride acrylate, vinylpyridine and N, N-diallylmethylammonium chloride.” The amended recitation is supported in the specification at page 11, line 19 to page 12, line 2, page 12, Table 1, page 15, lines 6-15. These recitations are necessary to achieve “rapid drying” and “fixation” as explained in Applicants’ previous response.

In Nguyen et al, the core/shell polymer contains “hydrophobic monomer such as styrene” less than 30 wt % ($y < 30$ wt %). Thus, Nguyen et al does not teach or suggest, among other things, “40 through

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80 wt% of styrene.” Patel et al and Fujisawa et al do not teach or suggest “40 through 80 wt% of styrene,” either. The “rapid drying” and “fixation” cannot be achieved in the prior art, as explained in the present specification at page 7, line 3 to page 8, line 8 and at page 11, line 19 to page 12, line 2.

Independent claims 1, 14, 16 and 17 have been further amended here to recite “wherein the primary particle of the copolymer is prepared by a polymerization process selected from the group consisting of an emulsion polymerization, a micro emulsion polymerization and a soap-free polymerization.” The cited references, taken alone or in combination, do not disclose these recitations in amended claims 1, 14, 16 and 17.

Nguyen discloses primary particle of a copolymer that includes 5 through 95 wt% of styrene, prepared by a dispersion polymerization as shown in Fig. 1. On the other hand, the present invention recites that “the primary particle of the copolymer is prepared by a polymerization process selected from the group consisting of an emulsion polymerization, a micro emulsion polymerization and a soap-free polymerization.”

Thus, the polymerization method in the present invention is different from the cited references and the present invention. Therefore, the primary particle of a copolymer has dissolved in the solvent in the present invention while the primary particle of a copolymer has been distributed in the solvent in the references. This difference is significant because, according to the present invention, when the ink is applied

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to the recording medium, the solvent penetrates into the recording medium while the colorant does not penetrate into the recording medium, thus, producing no blur.

For at least these reasons, claims 1, 4, 14, 16 and 17 patentably distinguish over the cited references. Claims 2, 4 and 6-10, depending from claim 1, also patentably distinguish over the cited references for at least the same reasons. Claim 15, depending from claim 14, claim 18, depending from claim 17, also patentably distinguish over the cited references for at least the same reasons.

In view of the aforementioned amendments and accompanying remarks, claims, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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